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ABSTRACT

Research was conducted to re-emphasize the importance of functional differences among jobs by showing how they help to better explain the income and status differences that are the main concern of recent stratification research. Status attainment, social class, and vocational psychological approaches to occupational and social differences were integrated into a multiple-market model, which suggests that the value of a determinant varies considerably by kind of work. Also the model's simultaneous use of situs as well as status of work provides a new perspective for developing a more comprehensive theory of social differentiation, for assessing social inequality more accurately, and for reducing inequality more effectively. A subsample of white men (black men, women, and men in artistic work were excluded) taken from a 1/1000 sample of the 1970 census was used to test the value of the multiple-market model in predicting income as opposed to the traditional one-market model. Results showed that the multiple-market model predicts statistical interactions between situs and other determinants of income. In contrast, the one-market predicts no interactions and no situs differences. (Author/TA)

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A MULTIPLE-LABOR MARKET MODEL OF OCCUPATIONAL ACHIEVEMENT

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Introductory Statement

The Center for Social Organization of Schools has two primary objectives: to develop a scientific knowledge of how schools affect their students, and to use this knowledge to develop better school practices and organization.

The Center works through three programs to achieve its objectives. The Schools and Maturity program is studying the effects of school, family, and peer group experiences on the development of attitudes consistent with psychosocial maturity. The objectives are to formulate, assess, and research important educational goals other than traditional academic achievement. The program has developed the Psychosocial Maturity (PSM) Inventory for the assessment of adolescent social, individual, and interpersonal adequacy. The School Organization program investigates the authority-control structures, task structures, reward systems, and peer group poocesses in schools. It has produced a large scale study of the effects of open schools on students, has developed the Teams-Games-Tournament (TGT) insturctional process for teaching various subjects in elementary and secondary schools, and has produced a computerized system for school-wide attendance monitoring. The School Process and Career Development program is studying transitions from high school to post-secondary institutions and the role of schooling in the development of career plans and the actualization of labor market outcomes.

This report, prepared by the School Organization program, examines how education and other determinants of occupational achievement may have different influences on income and status due to functional differences among occupations.

A Multiple-Labor Market Model

of Occupational Achievement

Abstract

For lack of a clear alternative, much work on occupational inequality has assumed that the same process of achievement characterizes all fields of work. Analyses of income differences among white men imply, in contrast, that reward structures vary considerably by type of work and that occupational achievement depends jointly on the characteristics of workers (such as education) and of occupations (such as functions performed). In this paper, status attainment, social class, and vocational psychological approaches to occupational and social differences are integrated, and the practical implications of this broader perspective for measuring and reducing racial inequality are discussed.

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A Multiple-Labor Market Model of Occupational Achievement

A worker's occupation is important in determining the quality of life that both the worker and the worker's family experience or can hope to experience. For example, we know that social workers, engineers, laborers, artists, real estate agents, and farmers live in different types of homes, have different friends and possessions, have different interests and values, and adhere to divergent political and religious beliefs. And we have strong preferences about which of these people we would want to trade lives with--or have as friends.

Sociologists have long been interested in the specialization and differentiation of work and its consequences for social solidarity and individual opportunity. The division of labor has been particularly important in stratification and mobility theory, the study of social inequality. The major stratification theories agree that economic and honorific differences among workers depend on the function of the jobs they perform within society, but these theories disagree about why the relation between job function and rewards exists. Functional theorists (Davis and Moore 1945) have assumed that some jobs are more highly rewarded because their functions are more important to society. In contrast, conflict theorists (Marx 1893/1967) have assumed that the functions of some occupations afford their incumbents greater power to control and obtain social and economic benefits. Some stratification theorists have emphasized that the division of labor is intimately associated not only with honorific and economic differences but also with many facets of social relations and style of life (Weber 1946).

Over the last few decades, stratification and mobility research has come to focus on measuring the desirability of different occupations and explaining why some people get good jobs whereas others do not. Sociologists now generally assume that there is a shared public standard for determining what is a good job, and they cite the high correlations between occupational prestige ratings made at different times and by different social groups as evidence of a shared standard (Hodge, Treiman, and Rossi 1966; Hodge, Siegel, and Rossi 1966). All people are assumed to compete to rise on this occupational ladder, but only those workers with the best resources are likely to reach the highest rungs. Research on occupational inequality has therefore focused on discovering which resources--such as education, intelligence, and social background--are most important and just how people convert their resources into occupational status and income (Duncan, Featherman, and Duncan 1972; Sewell and Hauser 1975).

This focus on the income and status attainment of individuals has been accompanied by increasingly sophisticated methods of analysis, but it has promoted a one-dimensional view of jobs and workers. Functional differences among jobs no longer occupy the attention of stratification researchers, but have instead become the province of other disciplines such as vocational and industrial psychology. Furthermore, this stream of attainment research has become divorced from the more traditional stratification work on social class formation, class consciousness, and the behavioral and attitudinal correlates of social class.

The object of this paper is to reemphasize the importance of

functional differences among jobs by showing how they help to better explain the income and status differences that are the main concern of recent stratification research. The object is also to show how disparate approaches to social and occupational differences can be integrated. Classifications of occupations according to situs[1] or functional similarity of work have received much attention from vocational psychologists (Roe 1956; Strong 1943; Holland 1973). They differentiate jobs not only by level of skills required but also by job activities, worker competencies, interests, and values required. The literature of vocational psychology implies that income is determined differently in different situses of work such as sales and management, science, skilled trades, and the arts.

In contrast, most current sociological research on income differences assumes that income is determined in the same way in all kinds of work, that all employers rank potential employees according to the same standards of desirability, and that they reward workers according to the same criteria of competency and productivity. In other words, current sociological work implicitly assumes a one-labor-market model of occupational achievement--all workers and employers compete for jobs and employees within a single labor market. Functional differences among jobs imply that a fundamentally different approach--a multiple-market model of occupational achievement--is more appropriate.

Rejection of the one-market model of attainment in favor of a multiple-market model has important consequences for both social theory and social practice. For example, it questions the usefulness of the current quest for the best single estimate of the income-producing

value of determinants such as years of education and vocational training, because the multiple-market model suggests that the value of a determinant varies considerably by kind of work. The simultaneous use of situs as well as status of work also provides a new perspective for developing a more comprehensive theory of social differentiation, for assessing social inequality more accurately, and for reducing inequality more effectively.

Research on Income

Research on income differences has shifted from measuring the size of income differences and finding the correlates of those differences to estimating the relative importance of various income determinants--for example, years of education, social background, academic aptitude, and work experience. Judgments about the relative importance of different income determinants are generally made from the coefficients of regression equations used to model income processes. The variables included in those models have varied by discipline and over time--sociologists have focused primarily on pre-labor market experiences, and economists have focused on experiences after entering the labor market. But the models have generally shared one important characteristic: they are one-market models (cf. Gordon 1972). This means that the regression equations are not estimated separately for different groups of occupations. Using a single regression equation for all occupations means that only a single estimate of the value of a particular determinant such as years of education is obtained for divergent fields of work--skilled trades, sales work, arts, and science. Although the value of different skills and qualifications could be expected to differ considerably by field of

work, models are routinely estimated separately only by race and sex (e.g. Hout and Morgan 1975).

The one-market model seems to be used by researchers not because it has been shown superior to others, but because researchers have not perceived any clear alternative. Sociological theory provides no compelling way to organize functional differences among jobs, and the situs classifications proposed by sociologists (Hatt 1950; Morris and Murphy 1959) have seldom received attention by anyone but their authors. Instead, sociologists have devoted their efforts to refining occupational status and prestige scales. Economists are more likely to stress the importance of differences among labor markets--the segmentation of the labor market. But they have not developed any satisfactory classification of occupations or markets. As Osterman (1975) notes, the interesting question is not whether the labor market is segmented but how it is segmented. Dual labor market economists have provided a theoretical basis for classifying occupations, but they have found no useful way of classifying occupations independently of the income differences they predict they will find among different hypothetical labor markets. Census categories are occasionally used by other researchers (Stolzenberg 1975) to develop income models for different occupational groups, but the census categories have long been criticized because they lack explicit principles for defining categories and because they are an unclear mixture of situs and status of work (Caplow 1954; Parnes 1954).

A Multiple-Market Model

Vocational psychology provides both a theoretical base and an empirical means for developing a classification of occupational labor

markets. Vocational psychologists have attended to situs of work, although they do not use the term situs, and they have developed both theories and classifications to summarize the major differences between kinds of occupations and types of people. At this time Holland's (1973) theory and classification appears to be the most influential, the most developed, and the best researched. The major categories of his classification of occupations are used here to approximate six broad situses of work in the U.S. occupational structure.

Holland's classification groups occupations according to their resemblance to six ideal types of work: Realistic (R), Investigative (I), Artistic (A), Social (S), Enterprising (E), and Conventional (C). Table 1 provides a brief description of the types. Each type of occupation is characterized by the kind of activities involved, the competencies required and rewarded, and the kind of interpersonal relations prevailing. A Realistic occupation, for example, is characterized by demands and opportunities for the concrete or systematic manipulation of objects, tools, machines, or animals. In contrast, a Social occupation is an environment characterized by demands and opportunities for the manipulation of people to inform, train, develop, cure, or enlighten.

Insert Table 1 About Here

The theory also postulates that people can be classified according to their resemblance to six personality types: Realistic (R), Investigative (I), Artistic (A), Social (S), Enterprising (E), and Conventional (C). Each personality type has a distinctive pattern of self-perceptions, interests, and competencies, and each shows a preference for different

kinds of occupations. The six types of personality are parallel to the six kinds of work and are also described in Table 1.

The classification was empirically developed from data on personality, aptitudes, worker traits, and job duties for people in different occupations (Holland 1962, 1966, 1973, 1975). A fuller description of the types and a description of other major theoretical constructs not discussed here are provided by Holland (1973). Walsh (1973) and Osipow (1973) provide other reviews of the theory.

Holland's classification should not be considered a replacement for socioeconomic scales of occupations; it should be used together with such scales. Table 2 summarizes the distribution of workers according to both prestige and Holland category of work. This table shows that although type of work is not independent of level of work, there is nevertheless considerable diversity in the kinds of work performed at most levels, particularly at the higher prestige levels.

Insert Table 2 About Here

Income, status, and educational achievement are only a peripheral concern of Holland's theory of careers, but the theory does suggest that the six major occupational types are situses characterized by different income determination processes. Two ways in which the theory suggests a multiple-market model of income determination are discussed below.

First, the different kinds of work require different skills. Consequently, resources which bring high returns in one type of work will not necessarily bring high income or prestige in other types. For example, education may be highly rewarded in scientific (Investigative)

or educational (Social) occupations and experience or specialized aptitudes may be highly rewarded in manual (Realistic) or Artistic work, but not vice versa.

Second, occupations are populated primarily by people with personalities congruent with that type of work. Social environments are populated primarily by Social people; Enterprising environments are populated by Enterprising people, and so on. The clustering of different personality types--who have different values, goals, and interests--in different occupations might lead to the creation of structurally different systems, each with its own institutionalized rules governing occupational success (cf. Kerr 1954). For example, Enterprising people dominate Enterprising environments, so Enterprising values such as economic achievement are likely to be informally enforced in those environments. These values are also the ones most likely to be formalized by members of that occupational group. As Durkheim (1893/1964) suggested, different occupational groups may create different moral communities. Also, the incentives most effective for Enterprising people are likely to differ from the incentives effective for Social, Artistic, or Investigative people. Consequently, employers are likely to have created different reward structures for the different occupational groups. For example, many jobs in the Social category, such as teaching, have fixed salaries with no provision for overtime pay, but provide non-monetary incentives (for instance, community recognition) for long hours and high quality performance. In contrast, many Enterprising jobs pay people by commission or according to hours worked, so that the more ambitious or persuasive can earn more money. The income prospects of individual workers whose values

differ from those of the people dominating an environment may therefore be determined by the way a job is structured by employers or other employees regardless of their own personal values or preferences. Consequently, taking account of differences in personal characteristics may not completely account for the association of type of work with income.

There may be many other sources of institutionalized differences in socioeconomic returns for the same skills. The point here is that Holland's theory implies that the different situses are different occupational markets. To use a familiar analogy in stratification and mobility work, different situses may be different occupational ladders. These ladders may reach to different heights in the occupational world, and the rules for climbing them may differ. It is expected, therefore, that regression models of income determination will differ if they are estimated separately by Holland situs of work.

The Data

A subsample of men was taken from a 1/1000 sample of the 1970 census of population. It was chosen to decrease the chances of finding income determination differences by situs, that is, to provide a strong test of one-market versus multiple-market models. Blacks and women were excluded because income may be determined differently for these populations than it is for white men. Men in military, farming, or part time jobs (less than 35 hours per week) were excluded for the same reason. The final sample consisted of 27,067 white men. Men in Artistic work were excluded from most of the analyses because there were few such men in the sample.

The data impose three main limitations upon the analyses. First, occupational title and hours worked per week were obtained for the year 1970 but income and weeks worked refer to 1969. I have assumed that the 1969 occupation is the same as the 1970 occupation. This is a reasonable assumption, because Byrne (1975) has shown that only 12.4% of 25-34 year old to 2.6% of 55-64 year old white men changed occupations during a one-year period. In any case, discrepancies cannot be expected to favorably bias the results, that is, to increase situs differences.

Second, the assumptions necessary for performing tests of significance are not met because the sample was constructed according to a stratified cluster design. There is no clear way of overcoming this limitation, nor of easily assessing its impact on research results. Many researchers use samples that are not simple random samples, the most widely used being the 1960 and 1970 census data, the Occupational Changes in a Generation data (Blau and Duncan 1967), and the National Longitudinal Surveys (Parnes et al. 1970). The few researchers who mention the sampling problem (for example, Blau and Duncan 1967) suggest no solution. However, Frankel (1971) concludes from empirical investigations of the effects of cluster designs on first- and second- order statistics that the sampling problem may not be serious.

The samples used here are large, so statistically significant results would be expected even for small differences and therefore would be of little interest. The best evidence for the substantive significance of differences among the different situses of work is the consistent and interpretable variation across the groups.

Third, some important variables are not available in the census data. Including social background and ability variables would enable better comparisons with status attainment research. Fringe benefits and other income-related characteristics probably very considerably by labor market but such information is not available in the census data. Also, without including workers' aspirations for category of work, it is not possible to say conclusively whether income differences by situs result from differences in workers or from differences in occupational systems.

A simple model of income attainment was used to test the superiority of a multiple-market versus a one-market model of attainment. Years of education, weeks worked in 1969, hours worked during the survey week, occupational prestige (Temme 1975), and Holland occupational situs were used to predict total 1969 income. (See Appendix A for a list of Holland codes for detailed occupational titles.) This model includes variables known to be important in accounting for income differences among individuals.

Income attainment models typically include more variables such as marital status, potential work experience, age, and vocational training. When these variables were included in the regression analyses, they did not alter the main conclusions. Therefore, the simpler model is used here to simplify presentation of the results.

Testing the One- and Multiple-Market Models

The usefulness of one-market versus multiple-market models was tested using regression analysis because this method has been traditional among status attainment and human capital researchers during the last decade for analyzing education, status, and income differences among

individuals. The multiple-market model predicts that separate regressions for each situs of work account for more of the income variation than does a single model. In other words, the multiple-market model predicts statistical interactions between situs and the other determinants of income. More basically, it predicts that the relations among variables in the model--for example, education, prestige, and income--differ by situs. Education might be correlated differently with income in Investigative (e.g. scientific) work than in Enterprising (e.g. sales and management) work. In contrast, the one-market model predicts no interactions and no situs differences in the patterns of correlations among income determinants.

Tests for Interactions

Table 3 compares the usefulness of five different models for predicting income in each of four age groups--26-35, 36-45, 46-55 and 56-65. Models 1 through 4 are all one-market models because only one regression equation was used to characterize all men within an age group. These four models differ only according to the specific variables used to predict income. Model 5 is a multiple-market model because separate regression equations were used for men in each situs.

Insert Table 3 About Here

Models 4 and 5 are used here to test the superiority of a multiple-market over a one-market model of achievement. Both use hours, weeks, prestige, and years of education of men to predict income and both take account of situs of work. Model 4, a one-market model, assumes that there is some constant advantage to being in some situses rather than

others and incorporates situs by adding dummy variables for situs. Model 5 assumes that processes of income determination differ by situs and so includes situs by calculating separate regressions for each situs. If the multiple-market model is superior, the errors of prediction for model 5 should be significantly smaller than those of model 4.

The results indicate that the multiple-market model predicts income substantially better than does the one-market model. Model 5 accounts for about one-third of the variance in income in the three oldest age groups, and accounts for 1.6 to 4.4% more variance than does model 4. F-tests for homogeneity of regression (Tatsuoka 1971) indicate that the multiple-market model is significantly better than the one-market model in all four age groups.

The squared multiple correlations (R^2) for three other one-market models are also presented in Table 3 to illustrate the relative usefulness of the multiple-market model. A comparison of models 1, 2, and 5 to model 3 indicates that using a multiple-market rather than a one-market model which does not incorporate situs in any way is as useful as adding prestige or years of education to a one-market model. Model 3 is a one-market model using hours, weeks, occupational prestige, and years of education as predictors of income. Comparing the percentage of income variance accounted for by the multiple-market model using the same four predictors in each situs--model 5--shows that situs interactions increase variance accounted for by 4.3 to 7.6%. This increase is comparable to that gained by adding prestige to the one-market model. A comparison of model 3 to model 2 shows that prestige adds from 3.1 to 8.5%. Adding education to the one-market model--that is, comparing model 3 to

model 1--adds only 1.8 to 3.6%. This is just half as much as is added by situs. These are conservative comparisons because situs is taken into account only after prestige and education have been added to the regression of income and these two variables therefore are credited with the variance they predict jointly with situs.

Differences among Situses

The tests for interactions provide evidence that income determination processes differ by situs, but they do not indicate what those differences are. The following analyses detail the size and pattern of some of those differences. The analyses focus primarily on the relations between the three measures of achievement--years of education, occupational prestige, and income.

Means, standard deviations, correlations, and regression coefficients are used to describe situs differences. Situs differences in mean income or other characteristics are not necessarily inconsistent with a one-market model. A one-market model does predict, however, that the patterns of means, standard deviations, and correlations should be the same in all situses. For example, we might expect men in one situs to have higher mean education, prestige, and income than men in another situs. We would not expect men in a third situs to be high in prestige and education but low in income. But the analyses reveal that the patterns of relations among variables do differ by situs and that these differences are found for all age groups. The following discussion focuses on men presumably established in their careers--ages 36-45, 46-55, and 56-65--because situs differences are most pronounced for these groups.

Table 4 shows that mean education, prestige, and income are low for all age groups in Realistic work (about 10 years of education, 34 prestige points, and $9,000), intermediate for men in Conventional work (about 13 years, 47 prestige points, and $11,000), and high for men in Investigative work (14 years, 59 prestige points, and $16,000).[2] However, the pattern shifts with Social and Enterprising work. On the average, men in the Social situs are high in both education and prestige but only intermediate in income. In contrast, men in Enterprising work are intermediate in education and prestige, but relatively high in income. Men in the Social situs have higher prestige on the average than do men in Enterprising work, but they earn only three-fourths as much money.

Insert Table 4 About Here

These mean differences accord with our general impressions of the occupational world. Almost all laborers, factory operatives, and other manual workers are found in Realistic work. Many of these jobs require little ability, education, or experience, and they yield little income or prestige. In contrast, Investigative work includes most scientific, medical, and technical work. The Investigative jobs of physician, mathematician, or physicist epitomize occupational success in the eyes of many people. The work requires considerable skill and education and yields considerable income or prestige. The deviations from the expected pattern also accord with our impressions of the occupational structure. Many workers in the Social situs, such as teachers and social workers, have a college education but earn relatively low salaries. Also, many salesmen and businessmen (Enterprising workers) with high incomes do not

seem to be accorded the social esteem that might be expected on the basis of their incomes.

Table 5 shows the correlations between education, prestige, and income and Table 6 shows the standard deviations of these variables for men in each situs. Differences among Realistic, Conventional, and Investigative work are consistent with a one-market model but the data for Social and Enterprising work present quite a different pattern.

Correlations among education, prestige, and income are somewhat higher in Conventional than in Realistic work. The correlations are even higher in Investigative work, but the patterns of correlations are similar in the three situses. Education and income are correlated in the .30's in Realistic and Conventional work, but in the .50's in Investigative work. The correlations of prestige with education are about .40 in Realistic and Conventional work, but .70 in Investigative work; the correlations of prestige with income are .40 versus .60.

Insert Table 5 About Here

These correlational differences are partly a function of the differences in standard deviations among situses of work. Table 6 shows that the variation in the three variables in question is much higher in Investigative work than in Realistic or Conventional work. These situses could therefore be conceptualized as groups subject to the same income determination processes but with different ranges of education, prestige, and income. In other words, a one-market model for Realistic, Conventional, and Investigative work cannot be rejected simply on the

basis of correlational differences. However, other data presented later do provide an explicit reason to question the appropriateness of a one-market model for these situses.

Insert Table 6 About Here

Other differences in correlations are not consistent with a one-market model. Table 5 shows that education and prestige are as highly correlated in Social as in Investigative work, and Table 6 shows that the variation in these two variables is also relatively high in both situses. At the same time, there is surprisingly little variation in income in the Social situs, and the correlations of income with education and prestige are much lower--about .30--than in Investigative work. In other words, there is considerable variation in both education and prestige in Investigative and Social occupations, but this variation is associated with high variation in income and a high mean income in the first situs but with relatively little variation and low income in the second.

The results for men in Enterprising work are different. Variation in education and prestige is lower than in Investigative work--and is similar instead to that in Realistic and Conventional work--but the variation in income is comparable to that of men in Investigative work. As would be expected from the lower variation of education and prestige in Enterprising work, the correlations among the three variables are not high--about .30 to .40.

In summary, the means, standard deviations, and correlations of

education, prestige, and income are progressively higher in Realistic, Conventional, and Investigative work. The means, variation, and correlations of prestige and education are high for men in the Social situs but their income is relatively low, homogeneous and only weakly correlated with education and prestige. On the other hand, the high level and variation of income in Enterprising work is accompanied by only moderate means and variation in education and prestige.

These differences in patterns among the variables suggest that the same variables may play different roles in determining income in the different situses. For example, education seems to make less difference for income in the Social than in the Investigative situs because the high level and variation in education is matched by a correspondingly high level and variation of income in the latter but not the former situs. Regression coefficients are often used to estimate the effects of different income determinants, so they were also examined. The simple model used here is not a comprehensive representation of income determination processes, so the regression coefficients are not intended to be accurate estimates of the causal importance of each variable. Instead, my objective is to show that variation by situs in regression coefficients is more dramatic than variations obtained by adding more variables to one-market models.

Table 7 shows the unstandardized regression coefficients and the proportion of variance (squared multiple correlation or R^2) accounted for by regression equations in the 20 age and situs groups. The table shows that an additional year of education generally is associated with an additional $200 to $300 per year in Realistic and Social

occupations, $400 to $600 in Conventional and Investigative work, and about $1000 in Enterprising work. When a single model is used for all situses, a year of education is associated with an additional $400 to $600, depending on age. The coefficients for prestige also differ, indicating that the relation of income to prestige differs by situs. These regression coefficients indicate that the relation ranges from $300 per point of prestige in Investigative work to under $100 in the Social situs.

Insert Table 7 About Here

Note how large these differences are. The coefficients for education are generally twice as large in Investigative and Conventional work and four times as large in Enterprising work as they are in Realistic and Social occupations. These large differences are replicated across the three oldest age groups. Other studies on the returns to education parallel the present results for all men; they often find that an additional year of education is associated with an additional $400-$500 in earnings or a 4-5% increase in income (Osterman 1975). These estimates generally vary by 10-40% when theoretically important variables such as ability and social background are omitted from income determination models (Griffin 1976; Wolfe 1972). The difference in coefficients among situses indicates that omitting occupational situses or markets has a much stronger bias on such estimates than does omission of the variables typically studied.

The severity of this apparent bias has important policy implications. For example, it would be misleading to say that a year of education is worth $500 if it is worth $200 in some lines of work but $1000 in others. Regression results from men in all occupations pooled together might indicate that job training is more useful than additional years of schooling for increasing income. However, it would be unwise for manpower training policies--say, for minorities--to routinely emphasize job training rather than formal education if job training is less important than staying in school for advancement in some occupational situses. It would be particularly unwise if these were also the best-paying situses.

Pattern of Situs Differences

Income and prestige differences among groups of men at different educational levels were also examined. These comparisons reveal a striking pattern of situs differences not evident in regression analyses. The major differences among the situses are illustrated in Figure 1. This figure includes education, prestige, income, and situs so that it shows relations among all four variables. Differences among men in the three oldest groups are relatively small so data for men 36-65 have been pooled to simplify presentation.

Insert Figure 1 About Here

Figure 1 shows the mean prestige and income of 20 subgroups of

men: four educational groups (9-11, 12, 13-15, and 16 or more years) within each of the five situses. The means for the four educational groups within each situs are connected by a line--one line for each situs. The mean years of education completed is about 10.1 in each of the five 9-11 year educational groups and about 13.9 in each of the 13-15 year groups. Men with 16 or more years (presumably college graduates), however, vary in mean years of education from 16.4 in Conventional work to 17.4 in the Social situs. Therefore a broken circle is shown for the three situses where the mean differs considerably from 16.4 years of education. This circle represents an estimate of what the mean income and prestige would be for men with 16.4 years of education.

The slope of the line for each situs can be conceived of as depicting the mixture of increased income and prestige associated with an increase in education. The figure illustrates one particularly important situs difference--the mixture of prestige and income associated with higher education varies markedly by situs. For example, more education in the Enterprising situs is associated with large increases in mean income but not in occupational prestige. In contrast, more education in the Social situs is associated with large increases in mean prestige but not in income. The ratio of increases in mean income to prestige from one educational level to another is approximately $150, $300, $500, $600, and $1200, respectively, for men in Social, Realistic, Investigative, Conventional and Enterprising work. Figure 1 also suggests that this mixture (the ratio of increases in mean income relative to mean prestige) does not

change much with increasing education. This can be seen in Figure 1, for the slopes of the lines are fairly constant in all but the Investigative situs.

These results illustrate some of the problems of comparing the effects of education on occupational achievement in different populations. Education may appear to have the same effect on prestige (or income) in different situses, but a different effect on income (or prestige). For example, men with a college education (for this example, men with 16.4 years of education) are on the average 10 points higher in prestige than men with 13-15 years of education (14 years on the average) in Realistic, Social, and Investigative work. But these differences in education and prestige are associated with average income differences of $4000, $2000 and $6000 in the same situses.

The foregoing results are based on conventional measures of achievement and methods of analysis in status attainment research. They indicate that situs differences do exist, that the differences are large and consistent, and that they make sense intuitively. The exact nature of situs differences can be determined only by further analyses which take account of measurement error and additional measures of monetary benefits and job characteristics. However, these preliminary results suggest that such research would be a rewarding next step in stratification and mobility research.

Implications

The one-market model of occupational achievement is a one-dimensional model of man and a one-dimensional model of the occupational structure; workers are ordered in a single queue by their desirability to "employers" and jobs by their desirability to "workers." Researchers using the model acknowledge that it is a simplified model of reality. The value of the present analyses is not that they demonstrate the obvious multi-dimensionality of the real world, but that they demonstrate how the one-market model is deficient and suggest a more useful and comprehensive perspective. Some theoretical and practical social implications of the research are discussed in the following sections.

An Alternative Paradigm

The change in conceptualization of occupational inequality suggested here is not another extension or amplification of the Blau-Duncan (1967) status attainment model; it does not involve adding situs variables to current one-market models. It is a restructuring of thought: the assumptions about people and jobs are different, new questions are raised, current research techniques are challenged, data are interpreted differently, and some previous anomolies are clarified. Some common assumptions of research on occupational inequality are reviewed to illustrate that a shift in approach is involved.

Despite admissions that a one-market model is too simple, the basic assumptions of that model are ingrained in much thinking about occupational achievement. Two such assumptions are that people can be ordered on a single scale of ability or intelligence, and that a single value can be assigned to the usefulness of social resources such as

education for securing income and prestige.

Research on occupational inequality generally ranks people along a single scale of intellectual ability, this dimension being referred to as intelligence or ability. The most heated recent debates about the measurement of intelligence have not been whether people should be ranked along a single continuum, but whether different methods are fair measures of that one ability continuum. Intelligence as usually measured reflects competencies valuable for succeeding in the reading, writing, and reasoning required for academic, scientific, or clerical pursuits, but it does not adequately reflect other domains of talent that are necessary for superior performance in managerial, leadership, sales, ministerial, social service, or artistic occupations. It is precisely those situses requiring talents for dealing with people rather than with data or things--Enterprising and Social--that deviate most dramatically from a one-market model of occupational achievement that incorporates academic achievement (years of education completed). Although Jencks (1972) has been widely quoted for his hypothesis that luck accounts for much difference in achievement, his suggestion that non-cognitive abilities are important (chapter 4) has been ignored. Earlier studies by psychologists (Baird 1976; Munday and Davis 1974; Richards 1970) have identified a variety of non-cognitive and non-academic abilities and so can provide valuable information for studies of differential occupational achievement.

Related to this one-dimensional treatment of human talents are continued efforts to provide the most accurate single estimate of the value of education and of other social resources for obtaining and

advancing within occupations. My analyses imply that there is no single value (cf. Eckaus, Safty, and Norman 1974)--the value varies by a factor of two to four depending on the occupational context. Therefore, questions about the relation of education to work should take account of the diversity of talents and labor markets. For example, which skills do schools foster or select? Do colleges and secondary schools vary considerably in the types of skills they foster or certify? Do particular schools, or schools in general, orient and train people for some labor markets but not for others? Has increased college attendance increased competition for jobs in some situses but not in others--for example, in Investigative but not Enterprising work? In short, analyses of the value of education or any other social advantage should take account of differences in the occupational settings in which workers are attempting to convert their advantages into desired outcomes.

Social Class

Most research on occupational inequality assesses an individual's socioeconomic status by assigning a score from some scale of prestige, income, education, or some combination of these variables. An alternative approach has been to characterize individuals according to their membership in different social classes, these classes being ordered hierarchically. Theories of social class assume that people who share the same socioeconomic fate may actually constitute a group because of their associations with one another or through their similar role in the productive system (Marx 1893/1967; Weber 1946). These theories therefore emphasize the growth, development, and interactions of social groups rather than the attributes of individuals.

The following assumptions about situses are consistent with concepts of social class. People in the different situses perform different functions in the productive system; they have different values and world views; and they associate more with people in the same situs than with workers in other situses. They socialize their children to have different values, interests, and competencies, and they expose their children to different job information and opportunities. So not only do the adults tend to be mobile within rather than between situses, but their children are also likely to enter work within the same situs as the parents. In brief, situs may be a barrier to horizontal mobility over careers or over generations of workers. It also helps to explain the apparent social distance between white-collar workers such as clerks (Conventional) and salesmen (Enterprising) and blue-collar workers (Realistic) despite their similar socioeconomic status.

The situses are not hierarchically ordered to the degree usually assumed for social classes. The situses overlap considerably in income, education, and prestige. Nevertheless, Investigative, Social, Artistic, and some Enterprising workers can be considered four social elites, with Realistic and Conventional workers constituting the bulk of the labor force. The situses are to some extent competing interest groups with different bases of influence. For example, in our society the power of the Enterprising situs is based on money and the control of most production, that of the Investigative situs on the mystery and practical usefulness of higher knowledge, and that of the Social situs on its maintenance of education, health, and the socialization of the young.

The comparison of situses with social classes is made to demonstrate that divergent theories of stratification can be integrated. Both functionalist and conflict theories, for example, are consistent with the discussion of situs differences. The comparison was also made to show how studies of group processes both inside and outside sociology--networks, interest groups, socialization, the development of elites--can contribute to a broad theory of socioeconomic differentiation.

Assessing Inequality and Discrimination

The multiple-market model implies that two sources of occupational differences must be clearly distinguished: (a) differences in what happens to people within a situs, and (b) differences in how people are distributed by situs. This distinction is probably important in explaining racial differences in income. Blacks may be channeled not only into the poorer-paying jobs within a situs, but also into situses with poor income prospects regardless of education or occupational prestige.

Different one-market status attainment models have been found appropriate for black and white men, and this occurrence has been taken as evidence that the processes of income determination differ by race. A multiple-market model of attainment shows why different one-market models might be found for blacks and whites even though income determination processes might not actually differ by race. Table 8 shows that blacks are distributed differently than whites among the situses. To illustrate, one half of the full time black workers aged 36-65 with 16 or more years of education, in contrast to only a fifth of the whites, are in the prestigous but low-paying Social occupations. Income deter-

mination also differs by situs, so we would expect a comparison of all white and all black workers to reveal differences in income determination by race. However, if we compared workers separately by situs, income determination processes might be similar for blacks and whites within some but not all situses. For example, income determination might be similar for men of both races in Realistic, Conventional, and Social work, but not in Enterprising or Investigative work. Special attention could then be devoted to the latter situses.

Insert Table 8 About Here

The multiple-market model also implies that some income and prestige differences are voluntary. Some people prefer Social occupations despite the low pay; others would not enter Enterprising jobs despite obvious income advantages. Aspirations differ by sex and race, both women and blacks more often preferring the Social situs of work than do white men (Nafziger et al. 1974; Gottfredson, Holland and Gottfredson 1975). If blacks and women differ from white men in the jobs they want, then we cannot say that all differences in the jobs they actually get reflect social inequality or discrimination. Certainly many race and sex differences in occupational achievement are not by choice. But neither should we reflexively equate social differences with inequality or discrimination. If some occupational differences are voluntary, then it is important to evaluate differences in aspirations for situs of work of people entering the labor force and to examine when and how these differences in aspirations develop. Differences in aspirations

not only present technical problems for measuring discrimination by sex or race, but as the following discussion makes clear, they also present ethical problems in reducing inequality.

Reducing Inequality

The multiple-market model has implications for changing occupational inequality. The model suggests that if the occupational structure remains constant, income differences between blacks and whites and between men and women will not be eliminated unless the distributions of these groups across situses are equalized. The differences in distribution by sex and race are probably the result both of choices by job applicants and by employers. Therefore, both hiring practices and the aspirations of job seekers would have to be changed. Employers are under pressure to change hiring practices and to increase recruitment of minorities. But efforts to change aspirations of potential applicants are infrequent and controversial. For example, efforts to manipulate scores to eliminate differences in the mean profiles of men and women taking vocational interest inventories have aroused considerable debate (G. Gottfredson 1976). Any attempts to change--or ignore--differences in the socialization of men and women and of blacks and whites involve the ethics of manipulating people in ways to which they or their families might rightfully object. Some interventions would be less objectionable. For example, black high school students might be exposed more often than they now are to work experience, job information, and role models in management and sales work, and so be more likely to enter and prosper in Enterprising work at all levels.

Although changing the distribution of women and blacks by situs

may be useful in the short run for reducing income differences by race and sex, it would not modify the overall occupational structure and so would not modify the great differences in material well being experienced by people in our society. Incomes would still vary considerably both within and between situses.

However, the discussion of situs differences suggests that the elimination of all differences in income, prestige, or other occupational rewards is not necessary for a fair society. A comfortable level of well being should be available to all workers, but beyond that level people should be able to pursue different goals. Jobs might differ in the mixture of rewards they provide--money, prestige, autonomy, interests and competencies fostered--and they might differ in the life styles and world views they encompass.

Origins of Situs Differences

The apparent situs differences in income determination probably cannot be accounted for by more extensive one-market models. Instead, situs differences may originate from variations in occupational reward systems, such as in criteria of evaluation, source of funds, and competencies required on the job. The present data do not allow a test of the following speculations, but they are offered to restructure thinking and promote research about the relation of job and personal characteristics to income. They are also offered as examples of labor market characteristics which should be examined in future research on income differences. These speculations are all based on the observation that workers in different situses perform different activities or functions.

Criteria for Evaluating Job Performance

The contributions that managers and salesmen (Enterprising workers) make to their organizations are quite variable but often easily quantifiable. One salesman or manager may commit a company to unprofitable transactions whereas another may bring enormous profits to the company--both seriously influencing the viability of the company. Income for these Enterprising workers is often based on the dollars that they bring to their organizations. Because the variation in effects of workers is great, the variation in income is also high. In contrast, the effects of workers in Realistic, Social, and Conventional work are less variable or more difficult to evaluate. For example, most accountants and clerical personnel probably have less variable effects upon their organizations, and one consequence of this fact is that incomes do not vary much either. In the Social situs outcomes or marginal productivity may be quite variable but hard to evaluate. Administrators, researchers, and public officials all attest to the difficulty of evaluating social service programs. Unable to discern variability in effects, employers may pay fairly uniform salaries.

Source of Funds

Enterprising workers probably are found largely in private businesses which derive their income directly from individual or organizational consumers. These businesses to some extent are able to modify their activities to produce goods and services to suit the preferences of current or potential customers, and therefore to maintain profits and provide high pay to motivate their managers and sales staff. In contrast, most workers in the Social situs provide services which are designated

by professionals and public officials as necessary for the health and welfare of citizens. These are the services for which consumers either will not pay (public health services), cannot pay (welfare and rehabilitation services), or are not expected to pay directly (primary and secondary education). Revenues for these services are not directly related to public demand and the activities are generally funded by non-profit or voluntary organizations or by government. These funding agencies are not likely to raise much more money than absolutely necessary to maintain services. Furthermore, an increase in demand for goods and services means increased revenues in the private sector but it means a strain on already limited budgets in the public sector. As a result, the general level of income for providers of social services is low and fluctuates little if at all with changes in demand for services.

Abilities Required

Different competencies may be important in the different situses so that the same level of a particular competency may be rewarded differently. For example, income variation is great within both Investigative and Enterprising work, but the four income predictors--including years of education--account much better for this variation in Investigative than in Enterprising work (see Table 7). Mathematical competencies, writing abilities, abstract reasoning, and other competencies important for academic success are probably less important for Enterprising work. Conversely, interpersonal skills such as speaking skills, persuasiveness, and assertiveness may be valuable traits for

managers and salespeople (Enterprising work) but less so for scientists and other Investigative workers. These speculations are consistent with evidence (Ghiselli 1949) about the differential validity of various aptitude tests in different occupations. The validity of academic aptitudes for predicting occupational success differs consistently and substantially among occupations.

Both occupational and personal characteristics are important in explaining income differences. My analyses do not reveal the degree to which each set of characteristics produces the observed situs differences in income. The evidence does suggest, however, that job attributes are important and should receive more attention in the future. The evidence also implies that income differences depend upon the particular combinations (or interactions) of person and job characteristics, and that thorough studies of occupational achievement must look not only at the nature of the competitors for jobs but also at the nature of the competitions they enter.

Footnotes

1. The term situs has been used inconsistently so a definition is necessary. Benoit-Smullyan (1944) advocated measuring social position in three different ways: status (position in a hierarchy), situs (membership in a group), and locus (socially defined function in an organized group). Benoit-Smullyan's original use of the words situs and locus is not now common. Situs is often used more or less vaguely to imply any non-hierarchical aspect of social position. In this paper I will use situs to specify the kind of work or job activities performed on a job, and status to refer to the position of a job or occupation within an occupational hierarchy. Situs will refer to the function of an occupation or set of occupations within the division of labor.

2. More extensive tables of results are provided in Appendix B and in Gottfredson (1976).

TABLE 1

Description of Personality Types and Work Environments

Personality	Work Environment	Sample Occupations	Related Categories
Realistic			
Has mechanical ability and lacks social ability; values concrete things, power, money, status. Is asocial, conforming, frank, materialistic, practical, stable, and uninsightful.	Fosters technical competencies and achievements, and manipulation of objects, machines, or animals; rewards the display of such values as money, power, and possessions. Encourages people to see the world in simple, tangible and traditional terms.	Mechanical engineer Plumber Auto Mechanic Fork lift operator	Manual Skilled trades Mechanical
Investigative			
Has mathematical and scientific ability and lacks leadership ability; values science. Is analytical, cautious, critical, independent, methodical, rational, reserved, and unpopular.	Fosters scientific competencies and achievements, and observation and systematic investigation of phenomena; rewards the display of scientific values. Encourages people to see the world in complex, abstract, independent, and original ways.	Physicist Weather observer Laboratory assistant TV repairperson	Scientific Intellectual

TABLE 1 continued

Artistic			
Has artistic and musical ability; values aesthetic qualities. Is complicated disorderly, emotional, impulsive, intuitive, nonconforming, and original.	Fosters artistic competencies and achievements, and ambiguous, free or unsystematized work; rewards display of artistic values. Encourages people to see the world in complex, independent, unconventional, and flexible ways.	Editor Decorator Garment designer Fashion model	Aesthetic Cultural Intellectual
Social			
Understands others and has teaching ability; values social and ethical activities and problems. Is cooperative, friendly, insightful, responsible, tactful, and understanding.	Fosters interpersonal competencies, and informing, training, curing, or enlightening others; rewards the display of social or humanitarian values. Encourages people to see the world in flexible ways.	Minister Elementary teacher Physical therapist Ward Attendant	Education Social Service

TABLE 1 continued

Enterprising			
Has leadership and persuasive abilities and lacks scientific ability; values political and economic achievement. Is acquisitive, ambitious, domineering, energetic, optimistic, self-confident, and talkative.	Fosters persuasive and leadership competencies or achievements, and the manipulation of others for personal or organizational goals; rewards the display of enterprising values and goals such as money, power, and status. Encourages people to see the world in terms of power, status, responsibility, and in stereotyped and simple terms.	Lawyer Contractor Automobile dealer Salesperson	Entrepreneurial Business contact Management Sales Political
Conventional			
Has clerical and numerical ability; values business and economic achievement. Is conforming, conscientious, inflexible, inhibited, orderly, practical, self-controlled, and unimaginative.	Fosters conformity and clerical competencies, and explicit manipulation of data, records, or written material; rewards the display of such values as money, dependability, conformity. Encourages people to see the world in conventional, stereotyped, constricted, simple and dependent ways.	Certified public accountant Secretary Timekeeper Clerk	Clerical Business detail Bureaucratic

TABLE 2

1970 Employment by Situs of Work and Occupational Prestige

(Thousands of Workers)

Situs of Work	Occupational Prestige Level							
	0-9	10-19	20-29	30-39	40-49	50-59	60-69	70+
Realistic	433	5,187	11,081	11,613	5,265	330	433	--
Investigative	--	--	--	612	813	210	1,446	610
Artistic	--	--	--	22	232	347	277	95
Social	228	128	296	1,738	1,018	1,546	3,199	241
Enterprising	64	--	159	3,743	4,112	1,928	1,867	280
Conventional	--	56	1,694	4,309	5,701	173	711	14

Source: Gottfredson (1976)

TABLE 3

Percentage of Variance in Income Accounted for

by Different Models of Income Determination

	One-Market Models				Multiple-Market Model[a]		
Age	(1) Hours Weeks Prestige	(2) Hours Weeks Education	(3) Hours Weeks Education Prestige	(4) Hours Weeks Education Prestige Situs[b]	(5) Hours Weeks Education Prestige	F for (5)-(4)[c]	d.f.
26-35	17.3	16.0	19.1	21.8	23.4	10.2	16,7626
36-45	25.6	22.1	28.2	31.4	35.8	31.8	16,7480
46-55	25.2	22.3	28.8	31.0	34.1	20.8	16,7118
56-65	22.9	16.9	25.4	27.8	31.2	13.1	16,4307

[a]Obtaining the percentage of variance in income accounted for by this multiple-market model involves adding together the sum of squared errors for the five regressions, dividing by the total sum of squares for income, and subtracting this ratio from 1:

$$\frac{s^2_{\hat{Y}}}{s^2_Y} = 1 - \frac{SSE_R + SSE_I + SSE_S + SSE_E + SSE_C}{SST_{\text{All men}}}$$

[b]Situs measured using four dummy variables.

[c]All F significant $p < .001$.

TABLE 4

Mean Years of Education, Prestige, and Income: By Age and Situs of Work

Situs of Work	Education				Prestige				Income			
	Age				Age				Age			
	26-35	36-45	46-55	56-65	26-35	36-45	46-55	56-65	26-35	36-45	46-55	56-65
Real	11.2	10.5	10.1	9.4	34.7	34.9	34.3	33.3	8,348	8,992	8,779	8,009
Inv	14.6	14.5	13.7	13.0	59.5	61.2	58.6	57.7	11,515	15,855	16,025	14,758
Soc	15.5	15.2	14.2	13.7	57.0	56.2	52.7	53.0	8,925	10,580	11,265	10,783
Ent	13.5	13.2	12.8	12.1	49.3	49.8	49.4	48.7	11,357	14,346	15,100	14,296
Conv	13.7	13.1	12.7	12.2	48.0	47.7	46.6	45.9	8,935	10,837	11,386	10,331

TABLE 5

Correlations Among Years of Education, Prestige, and Income: By Age and Situs of Work

Situs of Work	Education and Income				Education and Prestige				Prestige and Income			
	Age				Age				Age			
	26-35	36-45	46-55	56-65	26-35	36-45	46-55	56-65	26-35	36-45	46-55	56-65
Realistic	.29	.31	.33	.23	.35	.38	.35	.27	.36	.38	.39	.39
Investigative	.33	.54	.59	.52	.74	.77	.75	.76	.37	.63	.65	.59
Social	.09	.22	.35	.28	.68	.73	.67	.74	.10	.22	.29	.31
Enterprising	.28	.39	.36	.35	.42	.39	.39	.34	.24	.33	.29	.31
Conventional	.38	.36	.35	.37	.55	.40	.38	.44	.31	.29	.38	.37

TABLE 6

Standard Deviation of Years of Education,

Prestige, and Income: By Age and Situs of Work

Situs of Work	Education				Prestige				Income			
	Age				Age				Age			
	26-35	36-45	46-55	56-65	26-35	36-45	46-55	56-65	26-35	36-45	46-55	56-65
Real	2.4	2.8	2.8	2.9	9.5	9.8	9.5	9.5	3,654	4,182	4,315	3,995
Inv	2.8	3.2	3.7	4.1	14.3	15.3	15.6	17.0	6,549	10,366	10,844	11,644
Soc	2.5	3.1	3.6	3.9	10.9	12.1	12.9	13.3	4,265	5,102	7,227	7,028
Ent	2.5	2.8	2.8	3.1	10.3	9.6	9.8	10.0	6,843	9,239	10,564	11,092
Conv	2.5	2.7	2.5	2.6	10.3	9.4	9.6	9.7	4,006	6,099	6,216	6,003

TABLE 7: Unstandardized Regression Coefficients (b) from Predicting Income in Different Situs and Age Groups

	26-35	36-45	46-55	56-65	26-35	36-45	46-55	56-65
	Realistic				Investigative			
Education	271	274	326	179	393	475	649	454
Prestige	103	126	137	143	118	309	308	307
Hours	41	65	56	-7	27	313	274	107
Weeks	126	123	124	97	252	178	-35	-156
Intercept	-6335	-7161	-7758	-2847	-14873	-33001	-21343	-5750
R^2	.20	.22	.23	.19	.20	.46	.48	.36
	Social				Enterprising			
Education	102	168	620	246	669	986	1062	954
Prestige	39	66	47	112	98	204	192	238
Hours	-20	-5	-29	-90	127	98	86	-19
Weeks	158	116	230	181	226	199	270	189
Intercept	-1490	-1070	-9852	-3072	-19769	-23501	-25591	-17359
R^2	.08	.08	.17	.15	.15	.20	.17	.17
	Conventional				All Men			
Education	513	661	611	605	314	455	572	426
Prestige	44	97	170	151	84	165	187	203
Hours	55	165	104	77	63	106	96	15
Weeks	175	114	124	174	181	154	157	130
Intercept	-11199	-15463	-14913	-15742	-9851	-13823	-15192	-9508
R^2	.26	.19	.22	.24	.19	.28	.29	.25

TABLE 8

Percentage of Men Aged 36-65 in Each Situs of Work:

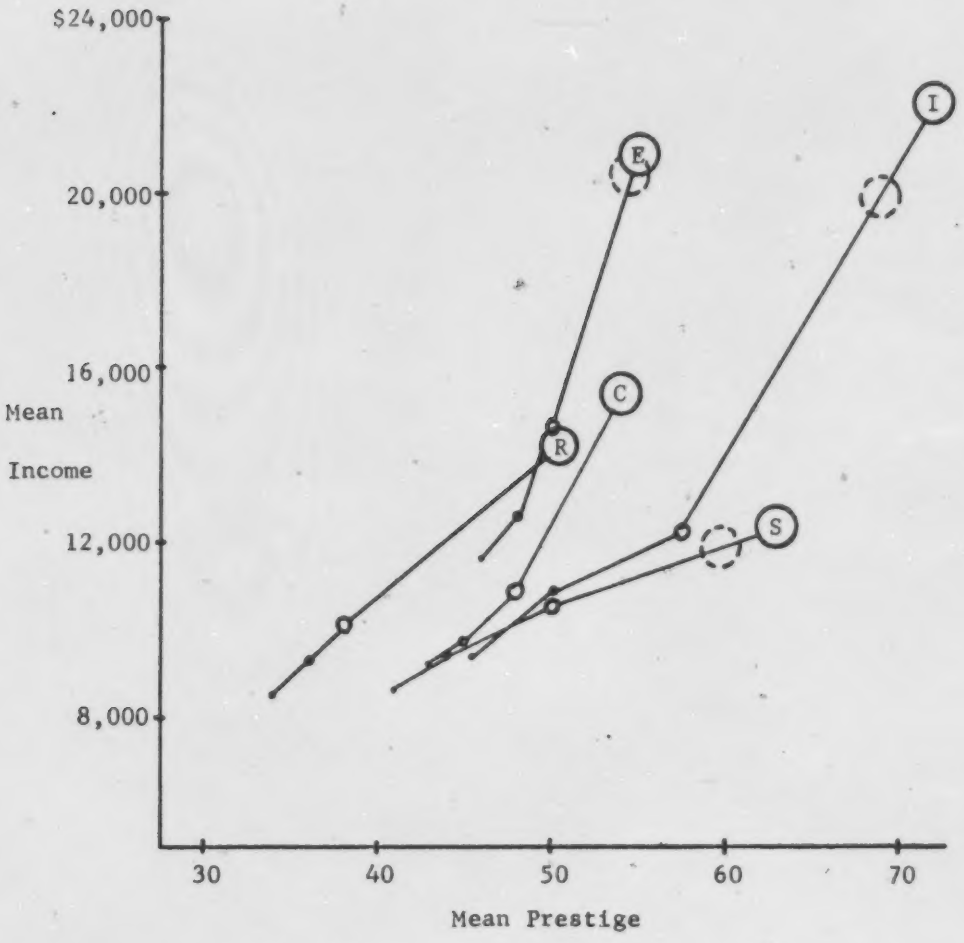
by Race and Educational Level

(Men Employed Full Time in 1970)

Situs of Work	Years of Education					
	8 or fewer	9-11	12	13-15	16 or more	Total
			Whites			
Real	82.0	70.5	55.2	31.8	10.2	53.8
Inv	3.4	3.7	5.1	8.1	20.8	7.4
Art	0.2	0.6	1.4	2.8	4.0	1.6
Soc	1.9	2.7	3.7	5.1	19.2	5.8
Ent	10.6	18.4	27.6	41.8	38.6	25.6
Conv	2.0	4.0	7.0	10.4	7.2	5.8
(N)	(4040)	(3892)	(5951)	(2239)	(3164)	(19286)
			Blacks			
Real	92.0	89.2	72.9	50.0	15.6	81.0
Inv	0.8	0.6	3.8	6.4	12.2	2.3
Art	--	--	0.8	2.1	4.4	0.5
Soc	2.2	2.6	6.1	13.8	46.7	6.3
Ent	3.7	3.7	8.0	10.6	12.2	5.4
Conv	1.2	4.0	8.4	17.0	8.9	4.5
(N)	(727)	(351)	(262)	(94)	(90)	(1524)

FIGURE 1

Mean Income and Prestige in Different Situses of Work: Men Aged 36-65 at Four Educational Levels



• 9-11 years of education
• 12 " " "
o 13-15 " " "
◯ 16 or more " "

◌ Estimate of what mean income and prestige would be if the groups with 16 or more years of education had a mean of 16.4 years (for situses where the mean differs from 16.4)

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Appendix A

Holland Codes and Prestige of Detailed Occupations in the 1970 Census

Occupations are listed in ascending order according to prestige within each of the six major Holland categories. Prestige codes were obtained from Temme (1975).

Three-letter Holland codes are provided for each detailed occupation because these more detailed codes are useful in some research (for example, Nafziger et al., 1974). Holland (1973) lists empirically derived codes for approximately 450 titles. These were used to recode corresponding detailed census titles. Viernstein (1972) has developed a scheme for estimating Holland codes using the Dictionary of Occupational Titles (U.S. Department of Labor, 1965) codes for occupations. Detailed titles from the census for which no empirical code was already available were given Holland codes by looking up these occupational titles in the Dictionary and then using Viernstein's translation procedure.

Census Code	Holland Code	Prestige	Occupational Title
Realistic			
913	RSC	0.0	Dishwashers
911	RSC	0.0	Busboys
941	RIC	1.6	Bootblacks
983	REC	2.0	Laundresses, private household
953	RCS	3.7	Ushers, recreation and amusement
823	RSE	8.5	Farm laborers, unpaid family workers
750	RSE	9.3	Carpenters helpers
822	RIC	10.8	Farm laborers, wage workers
984	REC	11.4	Maids and servants, private household
754	RCE	11.5	Garbage collectors
764	RIC	12.8	Vehicle washers and equipment cleaners
625	RCE	13.8	Produce graders and packers, except factory and farm
916	RSE	13.8	Food service workers, n.e.c.,* except private household
711	RSE	14.1	Parking attendants
761	RIE	14.5	Lumbermen, raftsmen and woodchoppers
914	RSE	14.6	Food counter and fountain workers
960	RSC	15.0	Crossing guards and bridge tenders
762	RIC	15.3	Stock handlers
755	RIC	15.5	Gardeners and groundskeepers, except farm

*n.e.c.--not elsewhere classified

901	REC	16.9	Chambermaids and maids, except private household
932	RCS	17.2	Attendants, recreation and amusement
981	RIS	17.4	Cooks, private household
752	RES	18.1	Fishermen and oystermen
902	REC	18.2	Cleaners and charwomen
623	RIS	18.3	Garage workers and gas station attendants
943	RSC	18.3	Elevator operators
630	RIC	19.2	Laundry and drycleaning operatives
780	RSE	19.2	Miscellaneous and not specified laborers
670	RIE	19.9	Carding, lapping and combing operatives
664	RIE	20.2	Shoemaking machine operatives
751	RSE	20.5	Construction laborers, except carpenters helpers
604	RIS	21.0	Bottling and canning operatives
624	RCE	21.3	Graders and sorters, manufacturing
662	RIC	21.6	Sawyers
672	RCS	21.7	Spinners, twisters and winders
763	RIC	22.2	Teamsters
706	RCE	22.6	Fork lift and tow motor operatives
903	RSE	22.7	Janitors and sextons
674	RIE	22.9	Textile operatives, n.e.c.
753	RSC	23.0	Freight and material handlers

740	RIC	23.3	Animal caretakers, except farm
643	RES	23.4	Packers and wrappers, except meat and produce
915	RSE	23.5	Waiters
620	RCE	23.6	Dyers
621	RIC	24.2	Filers, polishers, sanders and buffers
611	RIC	24.2	Clothing ironers and pressers
714	RSE	24.2	Taxicab drivers and chauffeurs
760	RSE	24.8	Longshoremen and stevedores
642	RCI	25.1	Oilers and greasers, except auto
770	RSE	25.3	Warehousemen, n.e.c.
392	REI	25.6	Weighers
660	RIC	25.9	Riveters and fasteners
962	RSE	26.0	Guards and watchmen
542	RIC	26.2	Shoe repairmen
710	RSE	26.4	Motormen; mine, factory, logging camp, etc.
671	RSI	26.4	Knitters, loopers and toppers
933	RSE	26.4	Attendants, personal service, n.e.c.
501	RIS	26.5	Millers: grain, flour and feed
641	RIC	26.8	Mixing operatives
634	RSE	27.3	Meat wrappers, retail trade
612	RCS	27.4	Cutting operatives, n.e.c.
640	RCS	27.6	Mine operatives, n.e.c.
935	RSE	27.9	Barbers

633	RSE	28.0	Meat cutters and butchers, manufacturing
563	RIE	28.0	Upholsterers
622	RCS	28.3	Furnacemen, smeltermen and pourers
546	RIC	28.4	Stone cutters and stone carvers
450	RCI	28.7	Inspectors, scalers and graders, log and lumber
661	RCS	28.8	Sailors and deckhands
715	RCE	29.1	Truck drivers
605	RCI	29.2	Chainmen, rodmen and axmen, survey
613	RCS	29.3	Dressmakers and seamstresses, except factory
673	RSI	29.3	Weavers
690	RIE	29.3	Miscellaneous and not specified operatives
412	RIE	29.6	Bulldozer operators
644	RCI	29.6	Painters, manufactured articles
534	RIE	29.7	Roofers and slaters
824	RSE	29.8	Farm service laborers, self employed
703	RCS	30.2	Bus drivers
912	RIS	30.2	Cooks, except private household
533	RIC	30.3	Rollers and finishers, metal
636	RCS	30.3	Milliners
602	RIC	30.3	Assemblers
701	RCS	30.8	Boatmen and canalmen
665	RIS	30.8	Solderers
421	RCS	30.9	Cement and concrete finishers

801	RIE	30.9	Farmers, owners and tenants
436	RIE	31.2	Excavating and road machine operatives, except bulldozer
510	RCI	31.3	Painters, construction and maintenance
551	RCS	31.7	Tailors
652	RIC	31.7	Lathe and milling machine operatives
424	RCE	31.8	Cranemen, derrickmen and hoistmen
651	RIC	31.8	Grinding machine operatives
614	RIC	32.0	Drillers, earth
681	RIE	32.1	Winding operatives, n.e.c.
656	RIE	32.2	Punch and stamping operatives
374	RIC	32.3	Shipping and receiving clerks
650	RIC	32.3	Drill press operatives
713	RES	32.4	Railroad switchmen
821	REI	32.6	Farm foremen
443	RIC	32.7	Furniture and wood finishers
483	RIS	32.8	Loom fixers
472	RIE	33.2	Automobile body repairmen
446	RIS	33.2	Heat treaters, annealers and temperers
680	RIS	33.4	Welders and flamecutters
635	RIE	33.5	Metal platers
381	RES	33.6	Stock clerks and storekeepers
420	RCS	33.7	Carpet installers
963	RSE	33.7	Marshals and constables
402	RIS	33.9	Bakers

512	RCI	34.0	Paperhangers
334	RCS	34.1	Meter readers, utilities
440	RCS	34.1	Floor layers, except tile setters
575	RIS	34.1	Craftsmen and kindred workers, n.e.c.
666	RIC	34.1	Stationary firemen
413	RCI	34.4	Cabinetmakers
610	RIC	34.4	Checkers, examiners and inspectors, manufacturing
331	RCS	34.5	Mail carriers, post office
503	RSE	34.5	Molders, metal
401	RIE	34.8	Automobile accessories installers
313	RSC	34.9	Collectors, bill and account
442	RIE	35.0	Forgemen and hammermen
965	RSE	35.1	Sheriffs and bailiffs
603	RCS	35.2	Blasters and powdermen
560	RCS	35.4	Tile setters
410	RCS	35.5	Brickmasons and stonemasons
520	RCS	35.5	Plasterers
704	RSE	35.5	Conductors and motormen, urban rail transit
653	RIC	35.6	Precision machine operatives, n.e.c.
403	RSE	35.7	Blacksmiths
712	RES	35.7	Railroad brakemen
645	RIC	36.0	Photographic process workers
405	RAI	36.2	Bookbinders

631	RSE	36.2	Meat cutters and butchers, except manufacturing
435	RIE	36.3	Engravers, except photoengravers
506	RIS	36.6	Opticians, lens grinders and polishers
473	RIE	36.6	Automobile mechanics
445	RIS	36.7	Glaziers
626	RCS	37.3	Heaters, metal
964	RSE	37.3	Policemen and detectives
601	RIC	37.4	Asbestos and insulation workers
516	RIC	37.5	Piano and organ tuners and repairmen
482	RSI	37.5	Household appliance installers and mechanics
615	RCS	37.7	Dry wall installers and lathers
505	RCI	37.9	Motion picture projectionists
486	RIE	38.2	Railroad and carshop repairmen
492	RIE	38.4	Miscellaneous mechanics and repairmen
415	RCI	38.7	Carpenters
495	RIE	38.8	Not specified mechanics and repairmen
171	RIS	39.0	Radio operators
454	RIE	39.4	Job and die setters, metal
550	RIC	39.5	Structural metal craftsmen
404	RIE	40.4	Boilermakers
452	RIC	40.7	Inspectors, n.e.c.
552	RCS	41.0	Telephone installers and repairmen

453	RIS	41.2	Jewelers and watchmakers
961	RSE	41.2	Firemen, fire protection
554	RIE	41.3	Telephone linemen and splicers
470	REI	41.4	Air conditioning, heat and refrigeration mechanics
461	RIE	41.5	Machinists
150	RIC	42.1	Agricultural and biological technicians, except health
535	RIE	42.4	Sheetmetal workers and tinsmiths
545	RIS	42.4	Stationary engineers
434	RIC	42.6	Electrotypers and stereotypers
484	RCI	42.6	Office machine repairmen
502	RIE	43.0	Millwrights
221	REI	43.2	Officers, pilots and pursers, ship
530	RIC	43.2	Pressmen and plate printers, printing
540	RIE	43.2	Shipfitters
522	RIE	43.4	Plumbers and pipe fitters
471	RIE	43.4	Aircraft mechanics
433	RIE	43.6	Electric power linemen and cablemen
422	RAI	43.6	Compositors and typesetters
430	RIS	43.8	Electricians
561	RIS	44.4	Tool and die makers
173	RIE	44.5	Technicians, n.e.c.
515	RSC	44.7	Photoengravers and lithographers
426	RIA	44.9	Dental laboratory technicians
441	REI	44.9	Foremen, n.e.c.

025	RIS	45.3	Foresters and conservationists
456	RSE	45.7	Locomotive firemen
226	RSE	45.9	Railroad conductors
154	RIE	46.0	Industrial engineering technicians
525	RIS	46.8	Power station operators
455	RES	47.5	Locomotive engineers
475	RIE	47.6	Data processing machine repairmen
155	RIE	47.7	Mechanical engineering technicians
161	RCI	49.4	Surveyors
152	RIE	50.4	Draftsmen
170	RIE	51.2	Flight engineers
164	RIE	52.2	Air traffic controllers
172	RIE	55.5	Tool programmers, numerical control
134	RIS	58.0	Trade, industrial, and technical college teachers
022	RIE	62.0	Sales engineers
011	RIE	62.6	Civil engineers
020	RIE	64.5	Mining engineers
021	RIE	67.0	Petroleum engineers
014	RIE	67.1	Mechanical engineers
Investigative			
480	ICR	36.6	Farm implement repairmen
481	ICR	39.8	Heavy equipment mechanics, including diesel
485	ISC	41.0	Radio and television repairmen
514	IRC	44.1	Pattern and model makers, except paper

343	ICR	44.4	Computer and peripheral equipment operators
151	IRE	45.5	Chemical technicians
162	IRC	46.4	Engineering and science technicians, n.e.c.
085	ISR	46.7	Health technicians, n.e.c.
083	IRS	47.1	Radiologic technicians
153	IRE	47.9	Electrical and electronic engineering technicians
080	ISC	52.4	Clinical lab technicians
156	IRA	56.5	Mathematical technicians
042	IRS	58.5	Agricultural scientists
055	IRA	59.5	Operations and systems researchers and analysts
064	IES	61.4	Pharmacists
073	ISR	61.4	Health practitioners, n.e.c.
061	ISR	61.8	Chiropractors
003	IRC	62.5	Computer programmers
195	ICR	62.7	Research workers, not specified
163	IRC	62.9	Airplane pilots
036	IRA	64.1	Statisticians
043	IRA	65.2	Atmospheric and space scientists
005	IRC	65.3	Computer specialists, n.e.c.
004	IRE	66.0	Computer systems analysts
023	IRE	66.0	Engineers, n.e.c.
063	ISR	67.0	Optometrists
095	ICR	67.6	Urban and regional planners

012	IRE	67.9	Engineers, electrical and electronic
044	ISR	68.0	Biological scientists
045	IAR	68.1	Chemists
091	IAS	68.2	Economists
015	IRE	68.4	Engineers, metallurgical and materials
072	IRS	68.8	Veterinarians
034	IEC	68.9	Actuaries
006	IRE	69.0	Aeronautical and astronautical engineers
010	IRE	69.7	Chemical engineers
112	ISR	71.0	Mathematics college teachers
052	IRS	71.3	Marine scientists
103	IRA	71.4	Atmospheric, earth, marine and space college teachers
051	IRA	71.8	Geologists
110	IAR	72.0	Physics college teachers
102	IRS	72.1	Agriculture college teachers
105	IAR	72.8	Chemistry college teachers
104	ISR	72.8	Biology college teachers
093	ISA	73.0	Psychologists
116	IAS	73.2	Economics college teachers
111	IRE	73.2	Engineering college teachers
053	IAR	73.6	Physicists and astronomers
054	IRS	74.2	Life and physical scientists, n.e.c.
035	IRA	74.7	Mathematicians

113	ISA	75.3	Health specialities college teachers
114	ISA	75.3	Psychology college teachers
062	IRE	76.7	Dentists
065	ISA	88.4	Physicians, medical and osteopathic
Artistic			
543	AIR	39.2	Sign painters and letterers
444	AIS	39.3	Furriers
182	AES	40.4	Dancers
191	AIR	42.9	Photographers
425	AIE	43.5	Decorators and window dressers
185	ASI	45.0	Musicians and composers
175	AIS	51.8	Actors
190	AIR	52.5	Painters and sculptors
260	AES	53.5	Advertising agents and salesmen
194	AIS	53.7	Writers, artists and entertainers, n.e.c.
183	AIS	55.5	Designers
192	AES	62.0	Public relations men and publicity writers
184	ASE	65.3	Editors and reporters
123	ASI	68.1	Art, drama, and music college teachers
181	AIS	68.5	Authors
126	ASE	70.3	English college teachers
002	AIR	70.9	Architects

Social

980	SRE	9.8	Child care workers, private household
982	SRE	15.8	Housekeepers, private household
952	SCE	19.0	School monitors
934	SCE	20.9	Baggage porters and bellhops
942	SRE	23.0	Child care workers, except private household
923	SRI	27.0	Health trainees
382	SCE	29.1	Teacher aides, except school monitors
320	SEC	30.3	Enumerators and interviewers
910	SEC	31.0	Bartenders
924	SAI	33.3	Lay midwives
925	SRI	33.6	Nursing aides, orderlies and attendants
950	SRE	36.6	Housekeepers, except private household
084	SRI	37.2	Therapy assistants
922	SRI	38.5	Health aides, except nursing
944	SAC	38.5	Hairdressers and cosmetologists
180	SRE	38.9	Athletes and kindred workers
216	SRE	41.5	Managers and superintendents, building
954	SRE	43.2	Welfare service aides
926	SAI	43.3	Practical nurses
323	SER	43.6	Expediters and production controllers
921	SAI	43.9	Dental assistants
390	SCE	44.2	Ticket, station and express agents

215	SIE	45.8	Inspectors, except construction; public administration
074	SIE	47.2	Dieticians
145	SAE	49.1	Teachers, except college and university, n.e.c.
213	SIE	49.6	Construction inspectors, public administration
165	SEC	50.3	Embalmers
143	SAI	50.9	Prekindergarten and kindergarten teachers
101	SCE	51.9	Recreation workers
201	SCE	51.9	Assessors, controllers and treasurers; local public administration
075	SIA	53.8	Registered nurses
090	SAI	53.9	Religious workers, n.e.c.
211	SEC	54.2	Funeral directors
081	SAI	55.3	Dental hygienists
082	SAI	55.5	Health record technicians
076	SIR	56.0	Therapists
223	SCE	56.0	Officers of lodges, societies and unions
033	SAI	56.4	Archivists and curators
141	SIA	58.0	Adult education teachers
086	SAI	59.6	Clergymen
100	SIA	60.7	Social workers
024	SRI	60.8	Farm management advisors
212	SCE	60.9	Health administrators

026	SAE	61.9	Home management advisors
144	SAE	62.7	Secondary school teachers
142	SAI	63.6	Elementary school teachers
032	SAI	63.7	Librarians
174	SEA	64.6	Vocational and educational counselors
071	SIR	64.7	Podiatrists
092	SIA	66.8	Political scientists
140	SIA	67.4	Teachers, college and university, subject not specified
124	SRE	68.8	Coaches and physical education college teachers
235	SEI	68.8	School administrators, college
096	SIA	69.0	Social scientists, n.e.c.
133	SAI	69.2	Theology college teachers
130	SAE	69.3	Foreign language college teachers
120	SEI	70.4	History college teachers
094	SIA	71.1	Sociologists
240	SEI	71.2	School administrators, elementary and secondary
135	SIA	71.9	Miscellaneous teachers, college and university
121	SIA	72.0	Sociology college teachers
131	SAE	73.4	Home economics college teachers
122	SIA	73.7	Social science teachers, n.e.c.
125	SAE	74.9	Education college teachers

Enterprising

266	ESC	5.3	Newsboys
264	ESC	25.2	Hucksters and peddlers
262	ESC	27.5	Demonstrators
705	ESR	30.5	Deliverymen and routemen
283	ESC	30.7	Sales clerks, retail trade
940	ESC	33.4	Boarding and lodging house keepers
315	ESC	38.2	Dispatchers and starters, vehicle
261	ESC	38.4	Auctioneers
245	ESI	38.5	Retail managers, gas station; salaried
245	ESI	38.6	Retail managers, gas stations; self employed
802	ERI	39.1	Farm managers
245	ESI	39.6	Retail managers, food stores; self employed
284	ESC	39.7	Salesmen, retail trade
285	ECS	41.0	Salesmen of services and construction
245	ESC	42.7	Personal services managers
245	ESC	42.7	Communications, utilities, and sanitary services managers; self employed
282	ESC	43.4	Sales representatives, wholesale trade
230	ESC	43.7	Restaurant, cafe, and bar managers
245	ESI	44.5	Retail managers, other retail; self employed
931	ESA	44.7	Airline stewardesses
245	ESC	44.9	Transportation managers, self employed

245	ESC	45.4	Construction managers, salaried
245	ESI	45.6	Retail managers, general merchandise; self employed
245	ESI	45.9	Retail managers, hardware; self employed
245	ESC	46.1	Personal services managers; salaried
245	ESI	46.2	Retail managers, food stores; salaried
245	ESI	46.3	Retail managers, furniture; self employed
245	ESC	46.4	Business and repair services managers; self employed
245	ESI	46.5	Retail managers, motor vehicles; self employed
281	ESC	47.1	Sales representatives, manufacturing industries
245	ESI	47.6	Retail managers, apparel; self employed
245	ESI	47.7	Retail managers, other retail; salaried
270	ECS	47.8	Real estate agents and brokers
245	ESI	47.9	Retail managers, motor vehicles; salaried
231	ESC	48.0	Sales managers and department heads, retail trade
245	ESI	48.0	Retail managers, hardware; salaried
245	ESC	48.3	Managers, all other industries; self employed
245	ESI	48.4	Retail managers, general merchandise; salaried
193	EAR	48.8	Radio and TV announcers

203	ECS	49.0	Buyers and shippers, farm products
224	ERC	49.0	Postmasters and mail superintendants
245	ESC	49.1	Managers, durable goods manufacturing
245	ESI	49.1	Retail managers, apparel; salaried
245	ESC	49.3	Managers, nondurable goods manufacturing; self employed
225	ECS	49.5	Purchasing agents and buyers, n.e.c.
265	ECS	49.7	Insurance agents, brokers and underwriters
245	ESI	49.7	Wholesale trade managers; self employed
245	ESI	50.4	Retail managers, furniture; salaried
205	ECS	50.7	Buyers, wholesale and retail trade
245	ESC	52.8	Transportation managers; salaried
245	ESC	54.6	Construction managers; self employed
245	ESI	55.7	Wholesale trade managers; salaried
222	ESC	55.8	Officers and administrators, public administration
245	ESC	56.1	Business and repair services managers; salaried
326	ESC	56.3	Insurance adjusters, examiners and investigators
245	ESC	56.3	Communications, utilities and sanitary services managers; salaried
220	ESC	57.3	Office managers, n.e.c.
245	ESC	57.3	Finance, insurance and real estate managers; self employed
056	ESC	58.3	Personnel and labor relations workers
363	ECS	59.7	Real estate appraisers

202	ECI	60.1	Bank officers and finance managers
245	ESC	60.1	Managers, all other industries; salaried
233	ESC	60.8	Sales managers, except retail trade
245	ESC	61.3	Managers, nondurable goods manufacturing; salaried
245	ESC	61.7	Finance, insurance and real estate managers; salaried
245	ESC	61.8	Managers, durable goods manufacturing; salaried
013	ERI	64.1	Industrial engineers
271	ESA	65.5	Stock and bond salesmen
031	EAS	76.4	Lawyers
132	EAS	77.1	Law college teachers
030	EAS	78.0	Judges
Conventional			
333, 383	CSR	16.7	Messengers, including telegraph and office boys
310	CSI	27.4	Cashiers
663	CRE	28.9	Sewers and stitchers
344	CRI	30.1	Duplicating machine operators
332	CER	30.8	Mail handlers, except post office
314	CES	33.0	Counter clerks, except food
330	CSA	33.1	Library attendants and assistants
355	CIR	34.0	Office machine operators
325	CRS	34.9	File clerks
311	CES	35.3	Clerical assistants, social welfare
385	CSE	35.7	Telephone operators

364	CSE	36.3	Receptionists
350	CRI	36.4	Tabulating machine operators
391	CIE	37.6	Typists
342	CIS	37.7	Calculating machine operators
303	CRI	38.5	Billing clerks
394,395	CES	39.6	Miscellaneous and not specified clerical workers
345	CRI	39.9	Keypunch operators
384	CIR	40.5	Telegraph operators
362	CIE	40.7	Proofreaders
341	CIS	40.8	Bookkeeping and billing machine operators
361	CER	41.2	Postal clerks
375	CIS	41.5	Statistical clerks
376	CES	42.5	Stenographers
301	CRS	43.7	Bank tellers
360	CIE	44.7	Payroll and timekeeping clerks
305	CSI	45.9	Bookkeepers
371	CSA	47.1	Medical secretaries
372	CSA	47.7	Secretaries, n.e.c.
321	CIS	48.3	Estimators and investigators, n.e.c.
370	CSA	49.0	Legal secretaries
312	CES	52.3	Clerical supervisors, n.e.c.
210	CES	56.4	Creditmen
001	CES	60.6	Accountants
115	CSE	73.3	Business and commerce college teachers

Note: Allocated and apprentice census categories are not listed. Also, 36 types of managers with the same census code (245) are listed separately here.

Appendix B

Additional Results by Age and Situs of Work:

Means, Standard Deviations, and Correlations of Years Education, Occupational Prestige, Hours Worked, Weeks Worked, and Income

TABLE B-1

Means and Standard Deviations for Men

in All Situses of Work (Except Artistic)

		Age			
		26-35	36-45	46-55	56-65
Years education	Mean	12.6	12.0	11.5	10.7
	SD	2.9	3.3	3.3	3.4
Occup prestige	Mean	43.1	43.3	41.8	40.3
	SD	14.1	14.1	13.4	13.5
Hours/week	Mean	45.3	45.4	44.6	44.0
	SD	7.2	7.4	7.0	6.7
Weeks/year	Mean	49.2	49.5	49.5	49.0
	SD	5.9	5.2	5.3	6.3
Income/year	Mean	9,456	11,232	11,248	10,242
	SD	5,169	7,233	7,878	7,764
Age	Mean	30.3	40.7	50.3	59.6
	SD	2.9	2.8	2.8	2.7
(N)		(7651)	(7505)	(7143)	(4332)

TABLE B-2

Means and Standard Deviations for Realistic Work

		Age			
		26-35	36-45	46-55	56-65
Years education	Mean	11.2	10.5	10.1	9.4
	SD	2.4	2.8	2.8	2.9
Occup prestige	Mean	34.7	34.9	34.3	33.3
	SD	9.5	9.8	9.5	9.5
Hours/week	Mean	44.5	44.2	43.6	42.9
	SD	6.8	6.6	6.2	5.7
Weeks/year	Mean	49.2	49.1	49.1	48.7
	SD	5.7	5.8	5.9	6.5
Income/year	Mean	8,348	8,992	8,779	8,009
	SD	3,654	4,182	4,315	3,995
Age	Mean	30.2	40.7	50.3	59.6
	SD	2.9	2.8	2.8	2.7
(N)		(4060)	(3934)	(3942)	(2503)

TABLE B-3

Means and Standard Deviations for Investigative Work

		Age			
		26-35	36-45	46-55	56-65
Years education	Mean	14.6	14.5	13.7	13.0
	SD	2.8	3.2	3.7	4.1
Occup prestige	Mean	59.5	61.2	58.6	57.7
	SD	14.3	15.3	15.6	17.0
Hours/week	Mean	44.7	45.2	44.5	44.2
	SD	7.1	7.5	7.1	6.8
Weeks/year	Mean	49.5	50.1	50.3	50.1
	SD	6.2	4.3	2.7	3.0
Income/year	Mean	11,515	15,855	16,025	14,758
	SD	6,549	10,366	10,844	11,644
Age	Mean	30.2	40.4	50.0	59.6
	SD	2.9	2.8	2.8	2.7
(N)		(786)	(675)	(506)	(242)

TABLE B-4

Means and Standard Deviations for Social Occupations

		Age			
		26-35	36-45	46-55	56-65
Years education	Mean	15.5	15.2	14.2	13.7
	SD	2.5	3.1	3.6	3.9
Occup prestige	Mean	57.0	56.2	52.7	53.0
	SD	10.9	12.1	12.9	13.3
Hours/week	Mean	46.2	46.7	46.0	45.7
	SD	7.8	8.2	7.9	7.8
Weeks/year	Mean	47.5	47.9	48.5	47.7
	SD	7.1	6.3	6.5	7.9
Income/year	Mean	8,925	10,580	11,265	10,783
	SD	4,265	5,102	7,227	7,028
Age	Mean	30.3	40.6	50.1	59.5
	SD	2.9	2.9	2.9	2.7
(N)		(565)	(492)	(406)	(226)

TABLE B-5

Means and Standard Deviations for Enterprising Work

		Age			
		26-35	36-45	46-55	56-65
Years education	Mean	13.5	13.2	12.8	12.1
	SD	2.5	2.8	2.8	3.1
Occup prestige	Mean	49.3	49.8	49.4	48.7
	SD	10.3	9.6	9.8	10.0
Hours/week	Mean	47.5	47.9	46.8	46.7
	SD	7.7	7.9	7.6	7.9
Weeks/year	Mean	49.7	50.2	50.2	49.7
	SD	5.4	3.9	3.8	5.8
Income/year	Mean	11,357	14,346	15,100	14,296
	SD	6,843	9,239	10,564	11,092
Age	Mean	30.5	40.7	50.3	59.6
	SD	2.8	2.8	2.8	2.7
(N)		(1796)	(1984)	(1884)	(1073)

TABLE B-6

Means and Standard Deviations for Conventional Work

		Age			
		26-35	36-45	46-55	56-65
Years education	Mean	13.7	13.1	12.7	12.2
	SD	2.5	2.7	2.5	2.6
Occup prestige	Mean	48.0	47.7	46.6	45.9
	SD	10.3	9.4	9.6	9.7
Hours/week	Mean	43.8	44.3	43.1	42.2
	SD	6.6	6.8	6.5	5.6
Weeks/year	Mean	49.0	50.2	49.8	49.3
	SD	6.9	3.8	5.3	7.2
Income/year	Mean	8,935	10,837	11,386	10,331
	SD	4,006	6,099	6,216	6,003
Age	Mean	30.0	40.4	50.3	59.5
	SD	2.9	2.8	2.8	2.6
(N)		(444)	(420)	(405)	(288)

TABLE B-7

Correlations for Men in All Situses of Work (Except Artistic):

Men 26-35 Above the Diagonal and Men 36-45 Below the Diagonal

	Educ	Pres	Hours	Weeks	Income	R[a]	I	S	E	C
Years educ		.64	.05	-.01	.32	-.49	.24	.29	.18	.10
Prestige	.64		.07	.02	.35	-.63	.39	.28	.24	.09
Hours/week	.10	.12		.04	.12	-.12	-.03	.04	.17	-.05
Weeks/year	.08	.09	.07		.21	.00	.01	-.08	.05	-.01
Income/year	.43	.48	.18	.16		-.23	.14	-.03	.20	.17
Real	-.49	-.63	-.17	-.07	-.32		-.36	-.30	-.59	-.26
Inv	.24	.40	-.01	.04	.20	-.33		-.10	-.19	-.08
Soc	.26	.24	.05	-.08	-.02	-.28	-.08		-.16	-.07
Ent	.22	.28	.20	.08	.26	-.63	-.19	-.16		-.14
Conv	.08	.08	-.04	.03	.03	-.26	-.08	-.06	-.15	

[a]Dummy variable

TABLE B-8

Correlations for Men in All Situses of Work (Except Artistic):

Men 46-55 Above the Diagonal and Men 56-65 Below the Diagonal

	Educ	Pres	Hours	Weeks	Income	R[a]	I	S	E	C
Years educ		.59	.09	.07	.44	-.46	.19	.21	.25	.09
Prestige	.55		.10	.11	.48	-.61	.35	.20	.34	.09
Hours/week	.11	.13		.06	.14	-.16	-.01	.05	.19	-.05
Weeks/year	.06	.08	.06		.16	-.08	.04	-.05	.08	.01
Income/year	.39	.47	.09	.15		-.35	.17	.00	.29	.00
Real	-.44	-.61	-.20	-.05	-.34		-.31	-.27	-.66	-.27
Inv	.16	.31	.01	.04	.14	-.28		-.07	-.16	-.07
Soc	.21	.22	.06	-.05	.02	-.27	-.06		-.15	-.06
Ent	.24	.36	.23	.06	.30	-.67	-.14	-.13		-.15
Conv	.12	.11	-.07	.01	.00	-.31	-.06	-.06	-.15	

[a]Dummy variable

TABLE B-9

Correlations for Realistic Work (Above the Diagonal)

and Investigative Work (Below the Diagonal)

	Educ	Pres	Hours	Weeks	Income
Ages 26-35					
Years educ		.35	.03	.07	.29
Prestige	.74		-.01	.14	.36
Hours/week	.13	.21		.03	.08
Weeks/year	-.13	-.09	-.04		.25
Income/year	.33	.37	.10	.19	
Ages 36-45					
Years educ		.38	.03	.09	.31
Prestige	.77		.01	.11	.38
Hours/week	.18	.29		.05	.12
Weeks/year	.01	.00	.03		.22
Income/year	.54	.63	.39	.08	
Ages 46-55					
Years educ		.35	.01	.07	.33
Prestige	.75		-.03	.11	.39
Hours/week	.24	.23		.03	.08
Weeks/year	-.01	-.01	.08		.22
Income/year	.59	.65	.33	.00	
Ages 56-65					
Years educ		.27	.04	.07	.23
Prestige	.76		-.04	.10	.39
Hours/week	.27	.33		.05	-.01
Weeks/year	-.02	-.06	.03		.20
Income/year	.52	.59	.25	-.07	

TABLE B-10

Correlations for Social Work (Above the Diagonal)

and Enterprising Work (Below the Diagonal)

	Educ	Pres	Hours	Weeks	Income
Ages 26-35					
Years educ		.68	.07	-.12	.09
Prestige	.42		.02	-.13	.10
Hours/week	-.12	-.08		.13	.00
Weeks/year	-.05	.00	.08		.24
Income/year	.28	.24	.12	.18	
Ages 36-45					
Years educ		.73	.13	.02	.22
Prestige	.39		.02	-.06	.22
Hours/week	-.07	-.04		.23	.04
Weeks/year	.09	.10	.02		.13
Income/year	.39	.33	.06	.13	
Ages 46-55					
Years educ		.67	.13	-.07	.35
Prestige	.39		.09	.00	.29
Hours/week	-.07	-.03		.18	.05
Weeks/year	.08	.08	.05		.18
Income/year	.36	.29	.04	.14	
Ages 56-65					
Years educ		.74	.13	.00	.28
Prestige	.34		.08	.04	.31
Hours/week	-.08	-.06		.18	-.03
Weeks/year	.06	.05	.03		.20
Income/year	.35	.31	-.05	.13	

TABLE B-11

Correlations for Conventional Work

	Educ	Pres	Hours	Weeks	Income
Ages 26-35					
Years educ		.55	.01	.01	.38
Prestige			.03	.06	.31
Hours/week				.04	.11
Weeks/year					.32
Income/year					
Ages 36-45					
Years educ		.40	.04	.06	.36
Prestige			.10	.06	.29
Hours/week				.02	.21
Weeks/year					.10
Income/year					
Ages 46-55					
Years educ		.38	.07	.01	.35
Prestige			.06	.17	.38
Hours/week				.06	.15
Weeks/year					.16
Income/year					
Ages 56-65					
Years educ		.44	.07	-.05	.37
Prestige			.16	.00	.37
Hours/week				.07	.15
Weeks/year					.20
Income/year					

TABLE B-12

Mean Income of Men 36-65: By Education and Situs of Work

Situs of Work	Years of Education					
	8 or fewer	9-11	12	13-15	16 or more	Total
Real	7,309	8,533	9,325	10,067	14,141	8,674
Inv	7,862	9,372	10,914	12,206	21,946	15,729
Art	a	10,675	11,320	14,203	15,537	13,652
Soc	7,301	8,609	9,427	10,464	12,304	10,868
Ent	9,788	11,607	12,599	14,628	20,796	14,623
Conv	7,792	9,154	9,770	10,839	15,360	10,906
Total	7,614	9,169	10,372	12,364	18,123	11,054

[a] Fewer than 10 cases

TABLE B-13

Mean Prestige of Men 36-65: By Education and Situs of Work

Situs of Work	Years of Education					
	8 or fewer	9-11	12	13-15	16 or more	Total
Real	30.9	33.6	36.0	38.4	50.5	34.3
Inv	41.6	45.3	50.2	57.4	71.7	59.7
Art	a	50.7	52.9	57.1	61.2	57.0
Soc	41.3	41.2	43.9	50.0	62.8	54.3
Ent	44.0	45.9	48.0	49.7	55.1	49.4
Conv	41.0	42.7	44.9	48.0	54.0	46.8
Total	33.1	37.0	41.2	46.8	59.7	42.3

[a] Fewer than 10 cases

TABLE B-14

Mean Years of Education of Men 36-65: By Educational Group and Situs of Work

Situs of Work	Years of Education					
	8 or fewer	9-11	12	13-15	16 or more	Total
Real	6.8	10.0	12.0	13.7	16.5	10.1
Inv	7.0	10.1	12.0	14.0	17.2	14.0
Art	a	9.9	12.0	14.1	16.8	14.1
Soc	6.8	10.2	12.0	13.9	17.4	14.5
Ent	7.1	10.2	12.0	13.9	16.7	12.8
Conv	7.3	10.2	12.0	13.9	16.4	12.7
Total	6.8	10.1	12.0	13.9	16.9	11.6

[a] Fewer than 10 cases

END